No. 610,488. Patented Sept. 6, 1898.

G. M. HUGUS.

DEVICE FOR INCREASING CRANK THROW OF ENGINES.

(Application filed June 28, 1897.)

(No Model.)

Fig. 1.

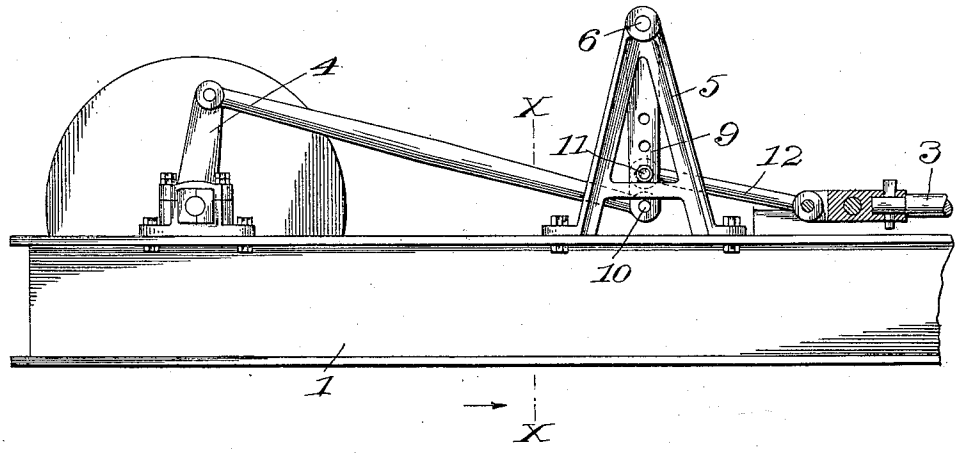
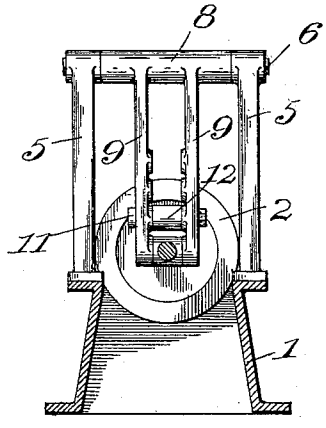


Fig. 2.



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UNITED STATES PATENT OFFICE.

GEORGE M. HUGUS, OF CALUMET, PENNSYLVANIA, ASSIGNOR OF ONE-HALF TO WILLIAM P. CUNNINGHAM, OF SAME PLACE.

DEVICE FOR INCREASING CRANK-THROW OF ENGINES.

SPECIFICATION forming part of Letters Patent No. 610,488, dated September 6, 1898.

Application filed June 28, 1897. Serial No. 642,659. (No model.)

To all whom it may concern:

Be it known that I, GEORGE M. HUGUS, of Calumet, in the county of Westmoreland and State of Pennsylvania, have invented certain new and useful Improvements in Devices for Increasing the Crank-Throw of Engines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to devices for increasing the crank-throw of steam-engines; and its object is to provide an improved device of the character described.

This invention consists of certain novel features of construction and combinations of parts hereinafter fully described and claimed.

In the accompanying drawings, Figure 1 is a side elevation of my device, and Fig. 2 is a section on the line *x x* of Fig. 1.

The numeral 1 indicates the bed-plate of a steam-engine. A cylinder 2 of ordinary construction is held thereon. A piston-rod 3 extends through the stuffing-box upon said cylinder and is of the usual form. A fly-wheel provided with a crank is indicated at 4. Bearings 5 held upon the bed-plate support a shaft 6 therein. A sleeve 8 is held to rock upon said shaft. Downwardly-extending arms 9 are held upon said sleeve, preferably formed integral therewith. A pin 10 is held at the lower end of said arms. A pin 11 is held between said pin 10 and the shaft. A rod 12 connects one of said pins with the piston-rod of the engine, and a similar rod connects the remaining pin with the crank thereof. It will be obvious that by varying the positions of these pins a difference in stroke is obtained, and in this manner I may increase the throw of the crank without increasing the stroke of the piston, or may decrease the stroke of the piston without increasing the throw of the crank. In the first-mentioned case it will be seen that an advantage in power is gained thereby, while in the other case an advantage in saving of steam may be gained. In this latter case another advantage lies in the fact that my device may be applied to an engine when it becomes necessary to shut down one of a bank of boilers and when the remaining boilers cannot give the full steam to said engine. Further, it will be seen that this device may be readily applied to any existing engine, it being merely necessary to remove the connecting-rod and affix my device.

It is obvious that changes may be made in the form of my device without departing from the material principles thereof. I do not therefore desire to confine myself to the exact construction herein shown and described, but wish to include all such as properly come within the scope of my invention.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

In a device of the character described, the combination with an engine-bed, of a pair of uprights adapted to be rigidly secured thereon, and set at a distance apart, a rod or shaft connecting the upper ends of said uprights, a sleeve journaled on said rod or shaft, pendent arms rigid on said sleeve and extending in parallel relation to each other and provided with longitudinal series of transversely-alined openings, and a pair of pins removably fitted in said openings, one pin being designed to engage the end of the piston-rod and the other the end of the crank-rod, whereby the piston-rod and crank-rod are both rendered adjustable at their point of connection with said arms, thus adapting the device as a whole to be adjusted to suit different engines, substantially as described.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

GEORGE M. HUGUS.

Witnesses:
JACOB REPP,
L. M. MUSICK.